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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,955	07/27/2001	Demetri Giannopoulos	US010345 (7790/46)	9326

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EXAMINER	
TOATLEY, GREGORY J	
ART UNIT	**PAPER NUMBER**
2836	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/916,955	GIANNOPOULOS ET AL.	
	Examiner	Art Unit	
	Gregory J. Toatley, Jr.	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,16 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,16 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 May 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

1. In view of the appeal brief filed on March 22, 2004, PROSECUTION IS HEREBY REOPENED. A new ground of rejection, using the same references is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Art Rejection Rationale

2. At the outset, the examiner notes that claims are to be given their broadest reasonable interpretation during prosecution. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969); In re Yamamoto, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984); Burlington Indus. V. Quigg, 822 F.2d 1581, 3 USPQ2d 1436 (Fed. Cir. 1987); In re Morris, 43 USPQ2d 1753, 1756 (Fed. Cir. 1997). In responding to this Office action, applicants are reminded of the requirements of 37 CFR §§ 1.111 and 1.119 that applicants specifically point out the specific distinctions believed to render the claims patentable over the references in presenting responsive arguments. See M.P.E.P. §

714.02. The support for any amendments made should also be specifically pointed out. See M.P.E.P. § 2163.06.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Russell, US 5,422,519.

Russell teaches:

A dual energy coupling device (fig. 4), comprising:

a first electric conductor; and

a second electric conductor,

wherein said first electric conductor is operable to transfer a magnetic energy (via inductive coupling) and an electric energy (via capacitive coupling) across an interface to said second electric conductor in response to a reception of an alternating electric signal (abstract, 5:59-65, and 6:1-5).

5. Claims 5-9, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Jaeger, US 3,742,408.

Regarding **claim 5**, Jaeger teaches:

A dual energy coupling device, comprising:

a first power source (10) operable to provide a first electric signal;

a first electric conductor (14) in electrical communication with said first power source to thereby receive the first electric signal when said first power source is providing the first electric signal; and

a second electric conductor (24),

wherein said first electric conductor is operable to transfer a first magnetic energy and a first electric energy across an interface to said second electric conductor in response to a reception of the first electric signal.

With regard to **claim 6**, Jaeger teaches a first load (20) in electrical communication with said second electric conductor (24),

wherein a current drive signal flows through said second electric conductor and said first load in response to a reception of said first magnetic energy by said second electric conductor.

With regard to claims 7 and 8, adding limitations of a second power source, third and fourth electrical conductors, and a second load; Jaeger teaches an inductively coupled connecter wherein a plurality of sources and loads may be interconnected using the concept as recited in claim 5. See 1:58-61, figs. 1 & 8.

With regard to **claim 9**, Jaeger teaches a power source operable to provide a current control signal; and

a third load operable to be in electrical communication with said power source in response to a reception of said first electric energy by said second electric conductor

and a reception of said second electric energy by said fourth electric conductor to thereby receive the current control signal when said power source is providing the current control signal (fig. 8, and 3:45-54, 4:1-8).

Regarding **claims 14 and 15**, Jaeger teaches:

a dual energy coupling device, comprising:

a first and second power source operable to provide a first electric signal;

a first load and second load;

a means for inductively coupling said first or second power source and said first or second load when said first or second power source is providing the first or second electric signal (figs. 1 and 8).

6. **Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Inoh et al., US 5,521,573.**

Inoh et al. teach a dual energy coupling device, comprising:

a first electric conductor (55a) having a spiral configuration; and

a second electric conductor (55c) having a spiral configuration,

wherein said first electric conductor and said second electric conductor are symmetrical relative to an interface (60).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Inoh et al., US 5,51,573.

Russell lacks the teaching of said first electric conductor has a spiral configuration and said second electric conductor has a spiral configuration. However, Inoh et al. teach these features (7:5-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell with the teachings of Inoh et. for the purpose of providing an improved magnetic coupling, low loss, and high frequency characteristics when used as a transformer (2:55-58).

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Esser et al., US 5,814,900.

Russell lacks the teaching of said first electric conductor and said second electric conductors are symmetrical relative to the interface. However, Esser et al. teach this feature (fig. 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell with the teachings of Esser et al. for the purpose of providing a device for transmitting electrical energy with which simultaneously changing (control) signals may be transmitted between components that are adjustable, i.e., rotatable, displaceable, slidable or movable, relative to one another (1: 61-66).

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell and Ohno et al., US 6,087,694.

Russell lacks the teaching of a first substrate including a corrugated surface having said first electric conductor formed thereon; and a second substrate includes a corrugated surface having said second electric conductor formed thereon.

Ohno et al. Teach first and second conductors, and the corrugation process on a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell with the teachings of Ohno et al. for the purpose of increasing or improving the surface area of the semiconductor device (2:61-62).

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Inoh et al..

Jaeger lacks the teaching of said first electric conductor has a spiral configuration and said second electric conductor has a spiral configuration. However, Inoh et al. teach these features (7:5-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Inoh et. for the purpose of providing an improved magnetic coupling, low loss, and high frequency characteristics when used as a transformer (2:55-58).

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jeager in view of Esser et al., US 5,814,900.

Jaeger lacks the teaching of said first electric conductor and said second electric conductors are symmetrical relative to the interface. However, Esser et al. teach this feature (fig. 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Esser et al. for the purpose of providing a device for transmitting electrical energy with which simultaneously changing (control) signals may be transmitted between components that are adjustable, i.e., rotatable, displaceable, slidable or movable, relative to one another (1: 61-66).

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Ohno et al..

Jaeger lacks the teaching of a first substrate including a corrugated surface having said first electric conductor formed thereon; and a second substrate includes a corrugated surface having said second electric conductor formed thereon.

Ohno et al. Teach first and second conductors, and the corrugation process on a substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Ohno et al. for the purpose of increasing or improving the surface area of the semiconductor device (2:61-62).

14. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Brown, US 4,893,332.

With regard to claim 16, Jaeger teaches:

a power source (10);

a third load (fig. 8).

Jaeger lacks the express teaching of a means for capacitively coupling said power source and said third load when said first power source and said first load are inductively coupled and when said second power source and said second load are inductively coupled. However, Brown teaches capacitive coupling (2:26-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Brown for the purpose of blocking any DC component on the line (2:29-30).

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaeger in view of Brown.

With regard to claim 17, Jaeger teaches:

a first power source (10) operable to provide a first electric signal;

a second power source (fig. 8) operable to provide a second electric signal;

a power source (fig. 8);

a load (20).

Jaeger lacks the express teaching of a means for capacitively coupling said power source and said third load when said first power source and said first load are inductively coupled and when said second power source and said second load are inductively coupled. However, Brown teaches capacitive coupling (2:26-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaeger with the teachings of Brown for the purpose of blocking any DC component on the line (2:29-30).

Response to Arguments

16. Applicant's arguments filed March 22, 2004 have been fully considered but they are not persuasive.

a. The applicant has argued that the references of Russell and Jaeger do not disclose the transfer of electrical energy as claimed. However this is not correct. First the examiner wishes to make clearly their position the phenomenon that is occurring. The applicant's use of electrical energy transfer to describe the

transfer of electrical energy by way of capactive coupling is confusing. Electrical energy transfer in the circuit of the applicants invention, Russell and Jaeger occurs first by taking advantage of a inductive (i.e. magnetic) coupling, which, simply stated, uses a magnetic field which is created running a A.C. signal though a conductor which induces an magnetic field in another coil which is in its proximity, and second by capacitive (i.e. electrostatic) coupling which takes advantage of the an electric field which is created between two conductors which have an dielectric between them. A rise in voltage in one conductor creates a rise in voltage in the other, thus creating a current. Both types of coupling cause electrical energy to be transferred. The claimed magnetic (inductively coupled) energy transfer and electric (capacitively coupled) energy transfer happen concurrently albeit to varying degrees depending on the types of conductors, the gap between them, and the type of dielectric (of which air is a known) present. Thus the applicant's arguments that both are not present are incorrect.

b. The applicant points to the electrical insulation disclosed in the reference of Russell as an electrically isolating element, see the applicants arguments regarding claim 1. This insulation prevents a user from being hurt by any electrically arcing which may occur between the conductive coils had the isolation not been present, but it does not prevent there being an transfer of energy by capactive coupling. Thus Russell shows both magnetic (inductive) and electrical (capacitive) energy transfer. Claims 1 – 4 are properly rejected.

c. The applicant claims that magnetic energy transfer does not occur in the invention of Jaeger, see the arguments with regard to claim 5. This is incorrect. Jaeger discloses an inductively coupled connector. This, by definition, is magnetic energy transfer. As indicated above energy is transferred both inductively and capacitively. Claims 5 - 12

d. The applicant's arguments regarding claims 16 and 17 fail for the same rationale as stated above which regard to claims 1 – 4.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory J. Toatley, Jr. whose telephone number is (571) 272-2059. The examiner can normally be reached on Mon. - Fri. 7:00 a.m. to 3 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 ext. 36. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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